

What is claimed is:

1. An apparatus for handling filter disks, the apparatus comprising:  
a center post member having first and second end portions;  
an attachment member operatively connected to the first end portion of  
the center post member, the attachment member including means for facilitating the  
5 lifting of at least one filter disks from a first position to a second position; and  
an adapter member, operatively connected to the second end portion of  
the center post member, the adapter member supporting the at least one filter disk which  
is operatively positioned relative to the center post member.
2. The apparatus of claim 1, further comprising:  
a lifting device operatively connected to the attachment member for  
vertically raising the handling apparatus such that the at least one filter disk can be  
transported from the first position to the second position.
3. The apparatus of claim 2, wherein the lifting device comprises:  
a motor powered hoist.
4. The apparatus of claim 2, wherein the lifting device comprises:  
a manually operated chain hoist.
5. The apparatus of claim 1, wherein the first position is an installed  
position within a filter assembly in which fluid passes through the at least one filter disk  
operatively positioned relative to the center post member and the second position is a  
remote location exterior to the filter assembly where the at least one filter disk can be  
5 removed from the center post member and replaced with at least one new filter disk  
thereon.
6. The apparatus of claim 1, wherein the attachment member is an eyebolt  
assembly having threads associated therewith for engaging with corresponding threads  
formed on the first end portion of the center post member.

7. The apparatus of claim 1, wherein the attachment member is a swivel hoist ring assembly having threads associated therewith, the threads for engaging with corresponding threads formed on the first end portion of the center post member.

8. The apparatus of claim 1, wherein the attachment member comprises:  
a lifting eye welded to the first end portion of the center post member.

9. The apparatus of claim 1, wherein the attachment member has an outside diameter which is smaller than a central aperture formed in the at least one filter disk, thereby allowing the at least one filter disk to be slid over the attachment member.

10. The apparatus of claim 1, wherein the adapter member is configured to support at least fourteen (14) filter disks.

11. The apparatus of claim 10, wherein the adapter member is configured to support at least fifty-six (56) filter disks.

12. The apparatus of claim 1, wherein the adapter member has female threads formed therein for operatively engaging with corresponding male threads formed on the second end portion of the center post member.

13. The apparatus of claim 1, wherein the adapter member further comprises:

at least one aperture formed therein for providing a flow passage through the adapter member.

14. The apparatus of claim 13, wherein the at least one aperture is semi-circular.

15. The apparatus of claim 1, wherein the at least one filter disk is operatively positioned relative to the center post member by sliding the at least one disk over the first end portion of the center post member.

16. A filter assembly comprising:

a housing having an interior chamber, a central axis and a bottom portion;

5 a base member having opposed upper and lower surfaces and at least an inlet portion and an outlet portion, the upper surface being operative to sealingly engage the bottom portion of the housing; and

at least one insert assembly sealingly engaged within the at least one outlet portion of the base member, the insert assembly comprising:

10 an upper surface which mates with the upper surface of the base member; and

15 a central aperture for sealing engagement with a center post assembly that has at least one filter disk engaged thereon, the central aperture providing a crevice-free flow path through the insert assembly when the center post assembly is disengaged therefrom thereby facilitating the cleaning of the interior chamber.

17. The filter assembly of claim 16, wherein the upper surface of the base member has a raised portion along located peripherally and lower portion positioned adjacent to the insert assembly.

18. The filter assembly of claim 17, wherein the upper surface has a transition portion between the raised and lower portion, the transition portion at an angle with respect to the lower portion.

19. The filter assembly of claim 16, wherein the upper surface of the base member includes a raised portion located along the periphery of the upper surface and a central region, the raised portion engaging with the bottom portion of the housing and connected to the central region by a concave surface.

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20. The filter assembly of claim 16, wherein the center post assembly comprises;

a center post member having a first end portion and a second end portion;

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an attachment member operatively engaged with the first end portion of the center post member, the attachment member including means for connecting to the center post assembly and disengaging from the at least one insert assembly; and

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an adapter member, operatively connected to the second end portion of the center post member and supporting the at least one filter disk which is operatively positioned relative to the center post member, the adapter member sealingly engaging the central aperture of the insert assembly when the center post assembly is in an installed position.

21. The filter assembly of claim 20, wherein the adapter member further comprises:

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at least one circumferential groove formed in an outer portion of the adapter member for receiving an o-ring and facilitating the sealing engagement of the adapter member with the central aperture of the insert assembly.

22. The filter assembly of claim 21, wherein the adapter member further comprises:

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at least one aperture formed therein for providing a flow passage through the adapter member when the center post member is in the installed position.

23. The filter assembly of claim 22, wherein the at least one aperture is semi-circular.

24. A method for handling filter disks from an initial position to a second position, the method comprising the acts of:

providing at least one filter disk;

operatively positioning the at least one filter disk onto a handling  
 5 apparatus, the handling apparatus comprising:

a center post member having a first end portion and a second end  
 portion;

an attachment member, operatively engaged with the first end  
 portion of the center post member and including means for facilitating  
 10 the lifting of at least one filter disk from an initial position to a second  
 position; and

an adapter member, operatively connected to the second end  
 portion of the center post member for supporting the at least one filter  
 disk operatively positioned relative to the center post member;

attaching a hoist device to the handling apparatus; and

vertically raising the handling apparatus and the at least one filter disk;

and

relocating the at least one disk from the initial position the second  
 position.

25. An apparatus for handling filter disks, the apparatus comprising:

an elongated post member having first and second end portions;

an attachment member operatively connected to the first end portion of  
 the elongated post member, the attachment member providing means for facilitating the  
 5 lifting of the handling apparatus from an installed position to a remote location; the  
 installed position being when the handling apparatus is operatively positioned within a  
 filter housing and the remote location being a location exterior to the filter housing;

an adapter member, operatively connected to the second end portion of  
 the elongated post member, the adapter member supporting at least one filter disk which  
 10 is operatively positioned relative to the elongated post member; and

a lifting device operatively connected to the attachment member for  
 vertically raising the handling apparatus such that the at least one filter disk can be  
 transported from the installed position to the remote location.

26. The apparatus of claim 25, wherein the lifting device comprises:

a motor powered hoist.

27. The apparatus of claim 25, wherein the lifting device comprises:  
a manually operated chain hoist.
28. The apparatus of claim 25, wherein the remote location is where the at least one filter disk can be removed and replaced with a new filter disk.
29. The apparatus of claim 25, wherein the attachment member is an eyebolt assembly having threads associated therewith for engaging with corresponding threads formed on the first end portion of the elongated post member.
30. The apparatus of claim 25, wherein the attachment member is a swivel hoist ring assembly having threads associated therewith, the threads engaging with corresponding threads formed on the first end portion of the elongated post member.
31. The apparatus of claim 25, wherein the attachment member comprises a lifting eye welded to the first end portion of the elongated post member.
32. The apparatus of claim 25, wherein the attachment member has an outside diameter which is smaller than a central aperture formed in the at least one filter disk thereby allowing the at least one filter disk to be slid over the attachment member.
33. The apparatus of claim 25, wherein the adapter member is configured to support at least fourteen (14) filter disks.
34. The apparatus of claim 33, wherein the adapter member is configured to support at least fifty-six (56) filter disks.
35. The apparatus of claim 25, wherein the adapter member has female threads formed therein for operatively engaging with corresponding male threads formed on the second end portion of the elongated post member.

36. The apparatus of claim 25, wherein the adapter member further comprises at least one aperture formed therein, the at least one aperture providing a flow passage through the adapter member.

37. The apparatus of claim 36, wherein the at least one aperture is semi-circular.

38. A filter assembly comprising:  
a housing having an interior chamber, a central axis and a bottom portion;

a base member having opposed upper and lower surfaces and at least an inlet portion and an outlet portion, the upper surface being operative to sealingly engage the bottom portion of the housing;

at least one insert assembly sealingly engaged within the at least one outlet portion of the base member, the insert assembly comprising:

an upper surface which mates with the upper surface of the base member;

a central aperture for sealing engagement with the center post assembly having at least one filter disk operatively positioned thereon, the central aperture providing a crevice-free flow path through the insert assembly when the center post member is disengaged therefrom thereby facilitating the cleaning of the interior chamber.

at least one filter disk having a central aperture operatively formed therein; and

a center post assembly comprising;

a center post member having first and second end portions;

an attachment member operatively connected to the first end portion of the center post member, for operatively connecting and disengaging the center post assembly from the at least one insert assembly; and

an adapter member, operatively connected to the second end portion of the center post member for supporting the at least one filter disk when

25       the at least one filter disk is operatively positioned on the center post member and for sealingly engaging with the central aperture, when the center post member is in the installed position in the housing.

39.     The filter assembly of claim 38, wherein the upper surface of the base member is downwardly sloped toward the insert assembly.

40.     The filter assembly of claim 38, wherein the upper surface of the base member includes a raised portion located along the periphery of the upper surface and a central region, the raised portion engaging with the bottom portion of the housing and connected to the central region by a concave surface.

5       41.     The filter assembly of claim 38, wherein the adapter member further comprises:

5             at least one circumferential groove formed in an outer portion of the adapter member for receiving an o-ring and facilitating the sealing engagement of the adapter member with the central aperture of the insert assembly.

42.     The filter assembly of claim 41, wherein the adapter member further comprises:

5             at least one aperture formed therein for providing a flow passage through the adapter member when the center post member is in the installed position.

43.     The filter assembly of claim 42, wherein the at least one aperture is semi-circular.